

## CLAIMS

### WHAT IS CLAIMED IS:

1. A method for forming an array of supported catalyst materials, said method comprising the steps of:
  - 5 a) delivering simultaneously at least four porous catalyst carriers in a dry solid state to at least four regions on a substrate, respectively;
  - b) impregnating said catalyst carrier with a catalytically active component or a precursor thereof on said substrate to form an array of supported materials for screening for heterogeneous catalytic properties; and
  - 10 c) removing at least a portion of said liquid medium.
2. The method according to claim 1 further comprising heat treating said array.
- 15 3. The method according to claim 1 further comprising calcining said array.
4. The method according to claim 1 wherein the composition of said catalyst carrier is different at different locations across the substrate.
- 20 5. The method according to claim 1 wherein the catalytically active component or the precursor thereof is different at different locations across the substrate.
6. The method according to claim 1 wherein the catalytically active  
25 component or the precursor thereof includes at least 3 component materials.
7. A method for forming an array of supported catalyst materials, said method comprising the steps of:
  - 30 a) delivering a plurality of solids, each consisting essentially of a different catalyst carrier, to a different region on a substrate;

b) impregnating said catalyst carriers with an amount of a catalytically active component or a precursor thereof on said substrate to form an array of supported materials.

5     8.            The method according to claim 7 further comprising heat treating said array.

9.            The method according to claim 7 further comprising calcining said array.

10    10.           The method according to claim 7 wherein the at least four porous catalyst carriers are delivered simultaneously.

11.           The method according to claim 7 wherein the catalytically active component or the precursor thereof is different at different locations across the  
15    substrate.

12.           The method according to claim 7 wherein the catalytically active component or the precursor thereof includes at least 3 component materials.

20    13.           A method for forming an array of supported catalyst candidate materials, the method comprising:

a) packing a solid support component into four or more wells of a first substrate, the first substrate having a substantially planar top surface between the tops of the four or more wells;

25    b) removing excess solid support component from the first substrate by substantially leveling the packed support component in the four or more wells with the top surface of the first substrate;

c) transferring the leveled, packed supports into four or more wells of a second substrate, the spatial arrangement of the four or more wells of the second  
30    substrate substantially corresponding to the spatial arrangement of the four or more wells of the first substrate and having a depth that is less than the depth of the corresponding four or more wells of the first substrate, the second

substrate having a substantially planar top surface between the tops of the four or more wells;

- d) removing excess solid support component from the second substrate by substantially leveling the packed support component in the four or more wells with the top surface of the second substrate;
- e) impregnating the four or more supports in situ in the second substrate with a candidate catalyst or a precursor thereof; and
- f) drying the impregnated supports to form an array of supported candidate catalyst materials.

14. The method according to claim 13 wherein the drying step includes heat treating said array.

15. The method according to claim 13 wherein the drying step includes calcining said array.

16. The method according to claim 13 wherein the at least four leveled, packed supports are transferred simultaneously.

17. The method according to claim 13 wherein the composition of said catalyst supports is different at different locations across the substrates.

18. The method according to claim 13 wherein the candidate catalyst or the precursor thereof is different at different locations across the second substrate.

19. The method according to claim 13 wherein the candidate catalyst or the precursor thereof includes at least 3 component materials.